

REMARKS

In response to the final Office Action mailed March 2, 2010 and the Advisory Action mailed June 1, 2010, Applicant respectfully requests the Examiner to reconsider the above-captioned Application in view of the foregoing amendments and the following remarks. By this paper, Applicant has amended Claims 1 and 15, and added new Claims 16-17. Accordingly, Claims 1-5, 7-10, 12, and 14-17 are currently pending in the present Application. Applicant respectfully submits that the present Application is in condition for allowance.

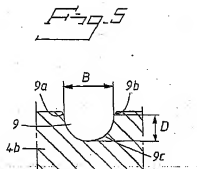
In the final Office Action, Claims 1-4, 7-10, 12 and 14-15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application No. 2004/0142304 issued to Cottrell (hereinafter “Cottrell”) in view of U.S. Patent No. 5,588,838 issued to Hansson et al. (hereinafter “Hansson”). Applicants respectfully traverse this rejection and submit that the combination of Cottrell and Hansson fails to teach at least a groove having a cup-shaped cross section as recited in Claim 1, and this feature is not an obvious variation of the prior art, as suggested by the Examiner.

The Examiner acknowledged that, “Cottrell/Hansson are silent to the cup-shaped cross section.” *See* Advisory Action, page 3. However, the Examiner then argues that, “it is well known in the dental field for dental implant’s threads/grooves to have a general cup-shaped cross section since the threads inherently have peaks a[nd] valleys. Therefore such shape would have been obvious to one having ordinary skill in the art since it was a matter of design choice” *See id.*

While Applicants agree that Cottrell and Hansson do not teach a cup-shaped cross section, Applicants respectfully disagree that such a cross-section would be obvious or a matter of design choice. To the contrary, although Cottrell is silent regarding the shape of the thread cross section, Hansson indicates what would be within the level of skill in the art—which is that the groove between two thread crests would be triangular or V-shaped, as shown in the cutout portion of the implant shown in Figures 1 and 2. Applicants submit that this V-shaped thread cross section is typical of such threads and contrary evidence has not been shown by the Examiner.

Moreover, Applicants respectfully submit that a groove having a cup-shaped cross section is not merely a matter of design choice. As detailed in the specification of the present

Application, the specific dimensions and shape of the groove of the implant result in significant benefits. For example, Applicant submits that a cup-shaped cross section in the claimed dimensional range provide for superior bone growth and osseointegration. The cup-shaped or U-shaped cross section recited in Claim 1 provide a uniform relation to depth and width that enables bone to grow unrestricted into the base resulting in superior stability and complete osseointegration of the implant and the jaw bone. See Figure 5 (reproduced below). Therefore, because the cited references fail to teach or provide any reason to provide these superior features, advantages, or benefits, Applicants believe that it cannot be regarded as obvious to provide a groove with a cup-shaped cross section, as recited in Claim 1. Hence, the combination of Cottrell and Hansson et al. would not result in the claimed dental implant.



Additionally, to advance prosecution, Applicants have amended Claim 1 to recite that the grooves form a closed loop and Claim 15 to recite that the groove “extends in a closed track” around an outer surface or periphery of the implant. As shown in the illustrated embodiments, the groove can form a ring or a “closed track” around the upper portion of the implant, as shown, for example, in Figs. 2-3 of the present Application.

In contrast to Claims 1 and 15, the cited references disclose helically-extending threads: ‘smaller threads’ 46b in Cottrell, ‘threads’ 9 in Hansson et al., and ‘gewinde’ (thread) 113 in the previously cited Baumgartner et al. (WO 01/49199 A2). Because threads have a pitch, they do not form a ring or “closed track.” Thus, in contrast to Claims 1 and 15, the cited references teach a helical groove that spirals up or down the implant.

Moreover, as described in the specification of the present application, the groove extending in “a closed track” provides various additional benefits and advantages that are not

taught in the cited references. *See e.g.*, Publication of the present application paragraphs 0007 and 0015. For example, because the groove extends in a closed track, bone ingrowth into the groove can provide a complete, uniform barrier against penetration of bacteria or organisms. The spiraling thread of the prior art does not provide a sufficient barrier because bacteria and organisms can simply follow the helical path of the thread and penetrate into the bone.

Furthermore, Applicants submit that a person of skill in the art who is seeking to provide a barrier against bacteria and organisms would not be motivated to use a groove or other type of excavation or recess because it would create a more open environment, which seems contrary to the end goal. Instead, a protruding barrier would likely be more appealing from a mechanical point of view because it would appear to more clearly block passage of such bacteria and organisms.

The unique synergistic benefits provided by the groove extending in a closed track and having a cup-shaped cross section, as recited in Claims 1 and 15, provide a surprising and effective solution to the challenges of implant instability and bacteria ingrowth in a manner that is not taught or otherwise suggested in the prior art or obvious to one of skill in the art.

Therefore, Applicants respectfully submit that Claims 1 and 15 are allowable over the art of record and respectfully request that the Examiner withdraw the rejection of these claims, as well as that of Claims 2-5, 7-10, 12, and 14. Further, Applicants submit that new Claims 16-17 should be allowable based on their own merit and for at least the reason that these claims depend from allowable independent base claims.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not

reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

CONCLUSION

Applicants respectfully submit that the above rejections and objections have been overcome and that the present Application is now in condition for allowance. Therefore, Applicants respectfully request that the Examiner indicate that Claims 1-5, 7-10, 12, and 14-17 are now acceptable and allowed. Accordingly, early issuance of a Notice of Allowance is most earnestly solicited.

Applicants respectfully submit that the claims are in condition for allowance in view of the above remarks. Any remarks in support of patentability of one claim, however, should not be imputed to any other claim, even if similar terminology is used. Additionally, any remarks referring to only a portion of a claim should not be understood to base patentability on that portion; rather, patentability must rest on each claim taken as a whole. Applicants respectfully traverse each of the Examiner's rejections and each of the Examiner's assertions regarding what the prior art shows or teaches, even if not expressly discussed herein. Although amendments have been made, no acquiescence or estoppel is or should be implied thereby. Rather, the amendments are made only to expedite prosecution of the present Application, and without prejudice to presentation or assertion, in the future, of claims on the subject matter affected thereby. Applicants also have not presented arguments concerning whether the applied references can be properly combined in view of, among other things, the clearly missing elements noted above, and Applicants reserve the right to later contest whether a proper reason exists to combine these references and to submit indicia of non-obviousness.

The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claim and drawings in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicants' attorney in order to resolve such issue promptly.

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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

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By: /Nathan S. Smith/
Nathan S. Smith
Registration No. 53,615
Attorney of Record
Customer No. 20995
(949) 760-0404

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